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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,756	11/20/2003	Warren Thomas Johnson	USFMCR.3C1C1	1448

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EXAMINER	
MENON, KRISHNAN S	

ART UNIT	PAPER NUMBER
1723	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/718,756	JOHNSON ET AL.
	Examiner	Art Unit
	Krishnan S Menon	1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/045,186.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/24/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-30 are pending

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Okano et al (US 4,547,289).

Okano teaches a membrane manifold comprising a housing (2), a sub-module connecting collar (see figures) adapted to receive the sub-module, sub-module sleeve with locking formation (see at 17) so that the sub-module can be secured to the collar by a clip (17) adapted to engage both collar and locking formation by surrounding them to prevent axial withdrawal of the sub-module as in claim 1 (see figures 1-17). Housing is in fluid communication with the collar as in claim 2 (see fig). Collar has an internal stepped seat for engaging the sub-module (at 9) as in claim 3. locking formation has radially outwardly directed circumferential flange (see fig) as in claim 4.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 5-10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okano (289) in view of Jenkins (US 6,048,454).

Okano teaches a membrane manifold comprising a housing (2), a sub-module connecting collar (see figures) adapted to receive the sub-module, sub-module sleeve with locking formation (see at 17) so that the sub-module can be secured to the collar by a clip (17) adapted to engage both collar and locking formation by surrounding them to prevent axial withdrawal of the sub-module as in claim 1 (see figures 1-17). Instant Claims add further limitations not taught by Okano, as follows: The clip is cylindrical with split sidewall which has a top and bottom in claim 5. The clip comprises radially inwardly directed circumferential flanges on top and bottom to engage with the sleeve and the collar in claims 6 and 7. Clip has projections on the sidewall adjacent the edges in claim 8, which extend longitudinally in claim 9. The top flange is partially circumferential in claim 10. Clip is mutually inter-engageable in claim 12, and adapted for over-centered circumferential locking in claim 13. Jenkins (454) teaches a clip in a filter apparatus which is cylindrical having split sidewalls and circumferential and

inwardly directing flanges and means for circumferential locking (see fig 9). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Jenkins in the teaching of Okano because the details of the clip in Okano (part 17) are not clear, and the Jenkins clip is easy to operate (see Jenkins col 4 lines 16-20).

2. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okano (289) in view of Selbie et al (US 5,405,528).

Okano teaches a membrane manifold comprising a housing (2), a sub-module connecting collar (see figures) adapted to receive the sub-module, sub-module sleeve with locking formation (see at 17) so that the sub-module can be secured to the collar by a clip (17) adapted to engage both collar and locking formation by surrounding them to prevent axial withdrawal of the sub-module as in claim 1 (see figures 1-17). Claims 14-16 add further limitations not taught by Okano, but taught by Selbie: Four sub-modules in the manifold in claim 14 (Selbie teaches multiple sub-modules – see figures). Collars are disposed in a common plane in claim 15 (see Selbie figures). One end of housing is adjacent each collar and axis of housing parallel with axis of collar (Selbie-figures). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Selbie in the teaching of Okano to provide multiple modules for larger volume processing with easily replaceable filter cartridges (Selbie abstract).

3. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okano (289) in view of McKinney (US 4,107,043).

Okano teaches all the3 limitations of claim 11, as in claim 1 above, except for the clip being hingedly connected. However, it would be obvious to one of ordinary skill in the art at the time of invention to hingedly connect the clip to the collar, a commonly used practice to prevent misplacing the clip like the lid 14 to the filter housing 10 of McKinney, fig 1, or like pegging a tool to an apparatus.

4. Claims 17-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selbie et al (US 5,405,528) in view of Okano (289) and Jenkins (454).

Selbie discloses a filter manifold with hollow fiber bundle filter cartridges (fig 1, 6), the apparatus has manifolds as head and base pieces (fig 1), a collar (56-fig 1) adapted to receive the housing (11-fig 1), connecting sleeve with locking formation (20, 31-fig 1), clip adapted to engage the collar and lock formation (68-fig 2 and 20) that prevents axial withdrawal of the module as in claim 17.

Selbie does not teach a clip that surrounds the collar and the sleeve ends as in claim 17. Okano in view of Jenkins teaches such a clip in a sub-module and manifold arrangement as in claim 1 above. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Okano in view of Jenkins in the teaching of Selbie to have good mechanical seal that prevents entry of original water in to the filtrate during disassembly (Okano – abstract and col 2 lines 14-32) and have very quick release of the clip (Jenkins col 4 lines 16-20).

Claims 18-21 and 30 add further limitations, which are taught by Selbie, as follows: Manifolds in head and base pieces as in claims 18 and 30 (see fig 1 and 5). Base piece can have a cleaning fluid conduit as in claim 19 and collars are adapted for placement of cleaning fluid conduit as in claim 20 (col 14 lines 26-42; fig 1), there is a removable cap at the end of the housing as in claim 21 (31, fig 2).

Claims 22-29 add the further limitations to claim 17 above, which are taught by Selbie, of a bank of filtration apparatus (see fig 5 and 6) and filtrate and cleaning fluid conduits as in claim 22 (43-fig 2; col 14 lines 26-42– back wash), filtrate and cleaning fluid conduits are above head and base piece (fig 2) as in claim 23; cleaning fluid conduit between two pairs of sub-module collars as in claim 24 (see 43-fig 2), aperture in cleaning fluid conduit (72, fig 2), housing is in communication with the filtrate conduit (49-fig 2), the array is adapted to be inserted in an open bank, and there is an array train as in instant claims 25-30 (fig 1, 6).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Krishnan Menon
Patent Examiner

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